

# Work Order ID 51382

August 20, 2009 3:13:58 PM



Page 1

Item ID: D3510-041

Accept

Revision ID: C

Item Name: Skidtube Insert Assembly

Start Date: 09/03/2009 Start Qty: 4.00

Required Date: 09/16/2009 Req'd Qty: 4.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan: *mf*

Date: *09-08-20*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D3510

Rev C

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

Turn as per Dwg D3510 & Folio FA652 ☐ Ensure that DT8877A Plug fits in tube.

J.F. 09/09/08 (4)

PTO - D

110

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

J.F. 09/09/08 (4)

120

0.00



HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1-Machine as per Folio FA652 and Dwg D3510 ☐ 2-Deburr ☐ Note: \* .250" dia holes are to be opened to finish size by skidtube dept, and missing .266" dia hole is to be drilled by skid dept. \*\*\*\*\*

*crk 09/09/09*

(4)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3510-041 PAR #: \_\_\_\_\_ Fault Category: Prod. eng. Coordinator NCR: Yes No DQA: / Date: 05.05.16  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: / Date: 05.05.16



NCR: 51382		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
09/09/08	100	I.D. is to big. Dia. 2.940" is 2.958", .008" over tolerance	<u>/</u> 05/10/12	Scrap and replace programmer error. # M <u>112582</u> Qty 1	J.F. 09/09/08	<u>OK</u> 09/09/09	<u>/</u> 05/10/12	<u>/</u> 05.05.08
		R.C. New program	<u>/</u> 05/10/12	Program fixed				

NOTE: Date & initial all entries

# Work Order ID 51382





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Item ID:	D3510-041	Accept		Setup	Start	
Revision ID:	C				Stop	
Item Name:	Skidtube Insert Assembly					
Start Date:	09/03/2009	Start Qty:	4.00		Cust Item ID:	
Required Date:	09/16/2009	Req'd Qty:	4.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:
	QC:	Date:	SPC (Y/N):	Date:

Run	Start	
	Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130  QC Quality Control	QC2- Inspect parts off machine FAI/FAIB  Memo	0.00  0.00							
140  QC Quality Control	QC8- Inspect parts - second check  Memo	0.00  0.00							
150  Skidtubes Skidtubes	Skidtubes  Memo 1-2-DrillL .266" Dia hole using DT8877B as per Dwg D3510 □2-Counter bore wearplate holes as per Dwg d3510.□3-open wearplatre holes to .297 as per Dwg D3510.□4-Deburr	0.00  0.00							

 9-9-10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



# Work Order ID 51382




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Item ID:	D3510-041	Accept		Setup	Start	
Revision ID:	C				Stop	
Item Name:	Skidtube Insert Assembly					
Start Date:	09/03/2009	Start Qty:	4.00		Cust Item ID:	
Required Date:	09/16/2009	Req'd Qty:	4.00		Customer:	

Reference:

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00	288 S on 10/10			(456)	φ		
170  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00 0.00	6/09-09-10.			(4)			
180  QC Quality Control	QC3- Inspect Part Finish  Memo	0.00 0.00	44 09/09/10			4	φ		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 51382**

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Page 4

Item ID: D3510-041

Accept

Revision ID: C

Item Name: Skidtube Insert Assembly

Start Date: 09/03/2009 Start Qty: 4.00

Required Date: 09/16/2009 Req'd Qty: 4.00




Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  HandFinish Hand Finishing	HandFinishing  Memo Install inserts as per Dwg D3510	0.00 0.00	BR 09-09-10			(H)			
200  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00	27 8 01/02/10			(X)	/		
210  Packaging Packaging	Identify as per dwg & Stock Location: _____  Memo	0.00 0.00	9/9/10			(Ux)			Sf

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries










**Work Order ID 51382**


August 20, 2009 3:13:58 PM

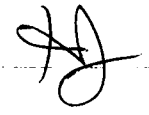


Page 5

Item ID: D3510-041 Accept  Setup Start   
Revision ID: C Stop   
Item Name: Skidtube Insert Assembly  
Start Date: 09/03/2009 Start Qty: 4.00  Cust Item ID:  
Required Date: 09/16/2009 Req'd Qty: 4.00  Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start   
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop 

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220  QC	QC21- Final Inspection - Work Order Release	0.00							
Quality Control	Memo	0.00							

09/09/11 

6309.11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 1

Work Order ID: 51382

Parent Item: D3510-041RevC

Parent Item Name: Skidtube Insert Assembly

Comments:

Start Date: 09/03/2009

Required Date: 09/16/2009

Start Qty: 4.00

Required Qty: 4.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
* ALS4-428-165		Purchased	No			100	Each	0.0000	8.0000			
Inserts												
ALS4-1032-225		Purchased	No			190	Each	8,834.000	24.0000			
Insert												

m 6989

8 BK 09-09-10

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

8834

107441

16

110768 ✓

8818

24 BK 09-09-10

ALS7-1032-130 Purchased No



insert

190

Each

3,628.000

8.0000



Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

3628

105855

16

108606

52

111529 ✓

1560

111779 ✓

2000

8 BK 09-09-10

D6016-065RevA Manufactured No



Skidtube Material

190

Each

0.0000

2.0000



m 6061 T6 T3.500W.375

M 112582

J.F. 09/09/08

Qty 2.55 F.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 57382
<b>Description:</b> Skidtube Insert		<b>Part Number:</b> D3570-041
<b>Inspection Dwg:</b> D3570 <b>Rev:</b> C		<b>Page 1 of 2</b>

### FIRST ARTICLE INSPECTION CHECKLIST

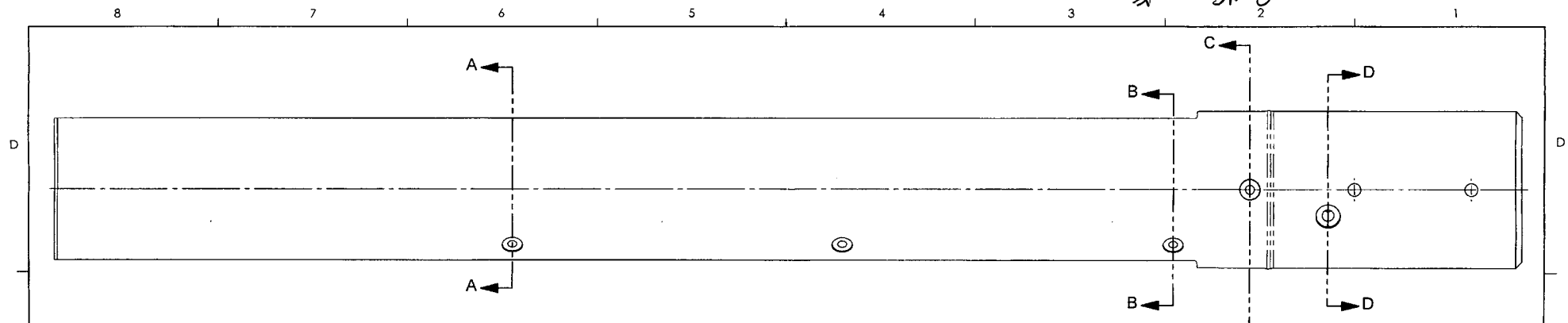
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø 3.300	±.010	3.300	✓			
0.063 X 45°	±.010	.070 X 45°	✓			
30.50	±.030	30.500	✓			
5.270	±.010	5.260	✓			
Ø 3.265	±.000 X 0.5°	3.265	✓			
.125 X 45°	±.010 X 0.5°	.132 X 45°	✓			
Ø 2.940	±.010	2.945	✓			
15.00	±.030	15.000	✓			
R.063	±.010	R.063	✓			
6.735	±.010	6.735	✓			
<del>2.750</del>	<del>±.010</del>					
2.750	±.010	2.760	✓			
Ø .266	±.001	Ø .269	✓			
2.165	±.010	2.165	✓			
1.600	±.010	1.600	✓			
13.750	±.010	13.750	✓			
6.875	±.010	6.875	✓			
9.575	±.010	9.575	✓			
R.25 X .066	±.010	R.25 X .066	✓			
2.96	±.030	2.959	✓			
.50	±.030	.501	✓			
Ø .391	±.010	Ø .394	✓			
Ø .516 X .100	±.010	Ø .515 X .103	✓			
.520	±.010	.517	✓			
<b>Measured by:</b> <i>SM</i>	<b>Audited by:</b> <i>SL</i>	<b>Prototype Approval:</b> N/A				
<b>Date:</b> 09/09/09	<b>Date:</b> 09/09/10	<b>Date:</b> N/A				

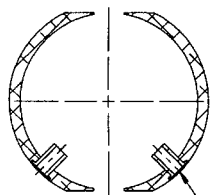
Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	



#51382  
mt 09-08-20

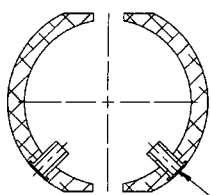


**D3510-041 SKIDTUBE INSERT**



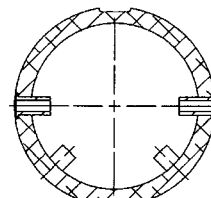
**SECTION A-A**

AFTER FINISH,  
INSTALL AELS-1032-130  
(2 PLACES)



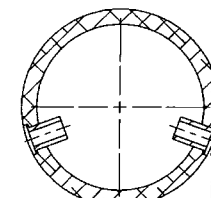
**SECTION B-B**

AFTER FINISH,  
INSTALL AELS-1032-225  
(4 PLACES)



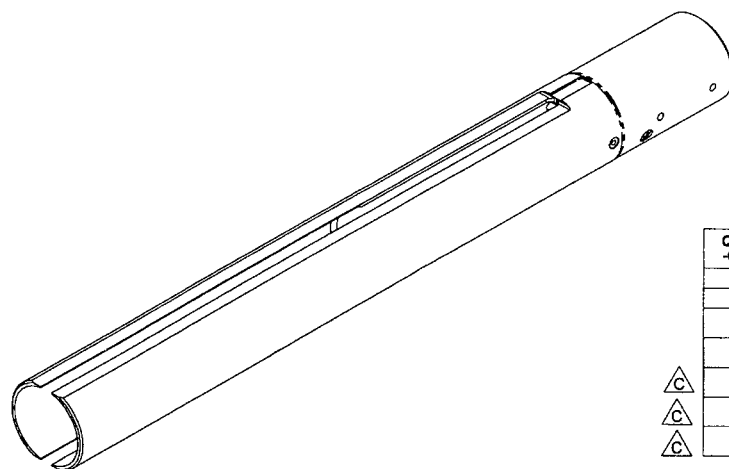
**SECTION C-C**

AFTER FINISH,  
INSTALL AELS-1032-225  
(2 PLACES)



**SECTION D-D**

AFTER FINISH,  
INSTALL ALS4-428-165  
(2 PLACES)



**PARTS LIST**

QTY -041	PART NUMBER	DESCRIPTION
X	D3510-041	SKIDTUBE INSERT
1	D6016-065	EXTRUSION
2	AELS-1032-130	INSERT
6	AELS-1032-225	INSERT
2	ALS4-428-165	INSERT



C	UPDATE DRAWING FORMAT AND CLARITY FOR MFG. CHANGE INSERTS FOR EASE OF INSTALLATION	PH	07.10.04
B	UPDATE DIMENSIONS	PH	06.09.20
A	NEW ISSUE	PH	06.04.21
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	<b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA	
DRAWN	PH		
CHECKED	PH	DRAWING NO.	REV. C
MFG. APPR.	PH	D3510	SHEET 1 OF 3
APPROVED	PH	TITLE	SCALE
DE APPR.	PH	SKIDTUBE INSERT	1:3
DATE	07.10.04	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMERCE TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

RELEASED  
07-11-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

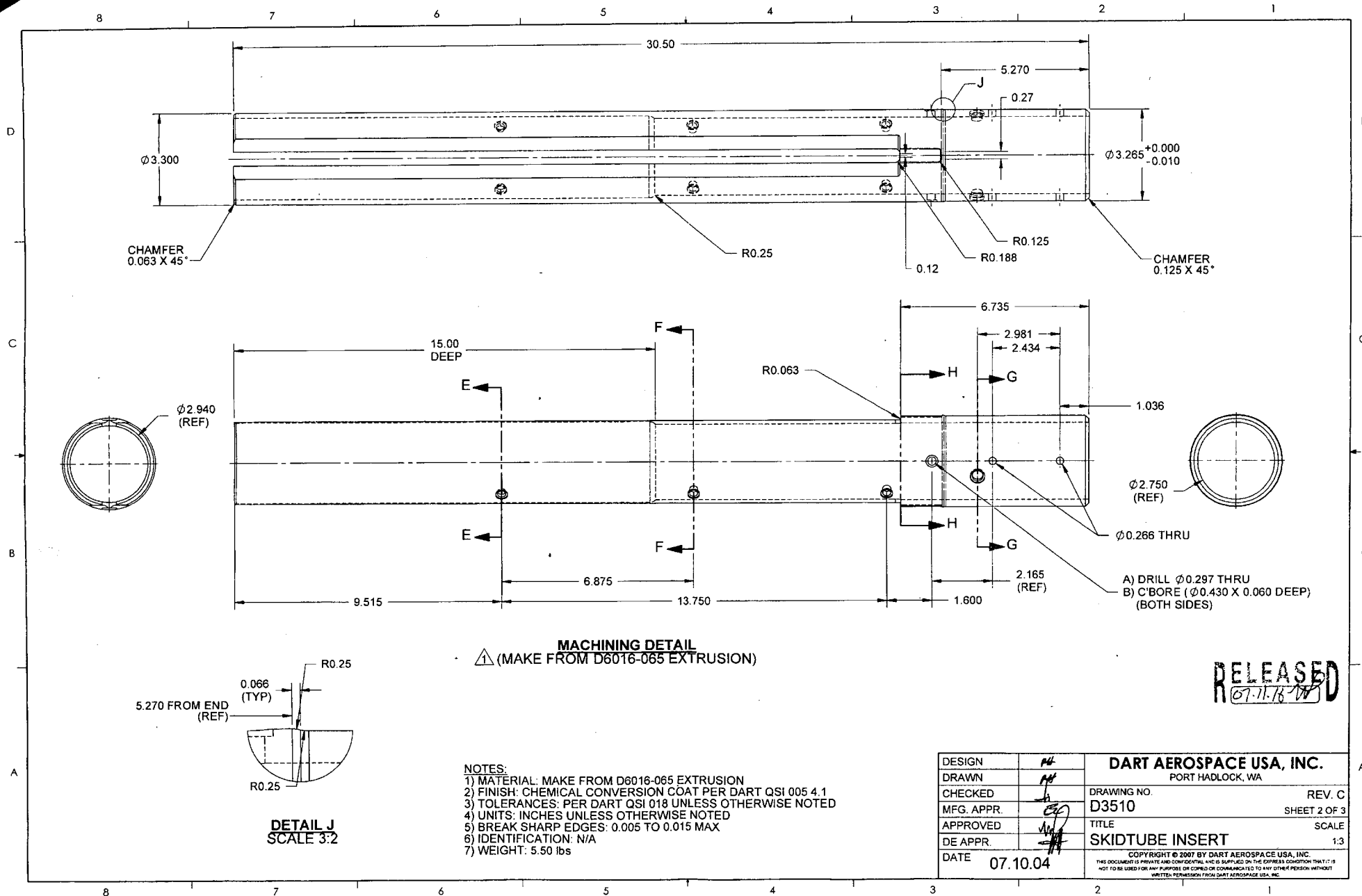
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





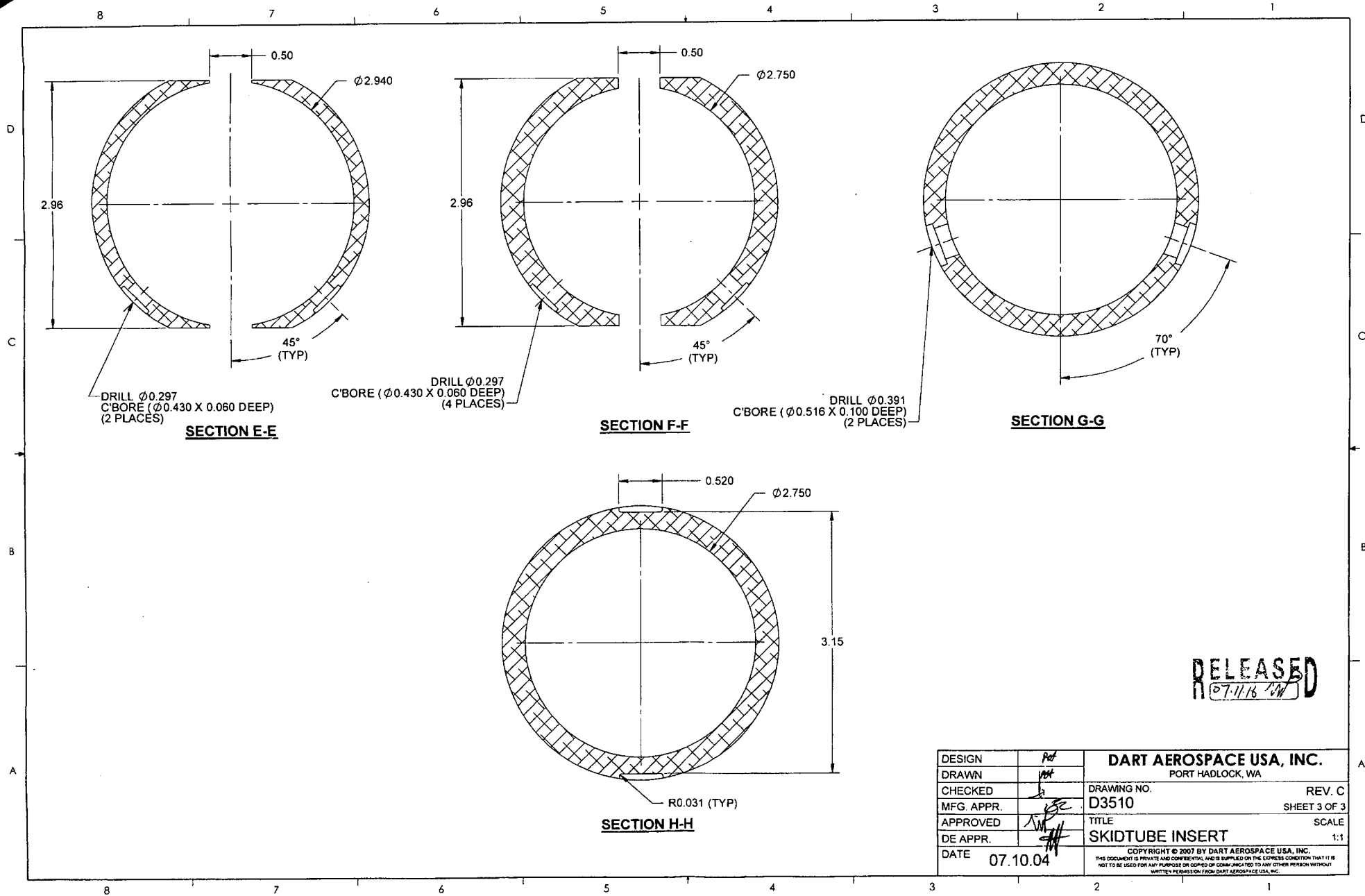
W/O:		WORK ORDER CHANGES				
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approv. Chief Eng / Prod Mgr

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



RELEASED  
07-11-16

DESIGN	Pat	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	JH	PORT HADLOCK, WA	
CHECKED	JH	DRAWING NO.	REV. C
MFG. APPR.	SE	D3510	SHEET 3 OF 3
APPROVED	JH	TITLE	SCALE
DE APPR.	JH	SKIDTUBE INSERT	1:1
DATE	07.10.04	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC.	
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W/O:		WORK ORDER CHANGES				
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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